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Contribution from the Bureau of Plant Industry

(Seed Distribution).

WM. A. TAYLOR, Chief.

MAKING AND MAINTAINING A LAWN.

The development of a satisfactory lawn depends to a large degree on the foundation upon which it has been started. A really good lawn rarely results from a poor beginning, and no reasonable amount of effort and expense will overcome mistakes in preliminary preparation.

SOIL AND SOIL PREPARATION.

A suitable soil is the first consideration in lawn making. Especially is this true where the climate is unfavorable to the best growth of the turf-forming grasses. There are few soils that can not be improved by treatment, and in the case of most soils much treatment is necessary. Good drainage, good texture, and good preparation are essential considerations. Good drainage should be secured before further preparation is made. In very few cases is tiling necessary for the ordinary lawn, but for an extensive low-lying area or for areas where thorough surface drainage is impracticable tile properly laid will result in much improvement.

A deep loamy soil is easily made suitable for lawn purposes, since it already possesses a good texture. If lacking in fertility it can be enriched by the addition of barnyard manure or, if this is not available, an application of 20 pounds of bone meal for an area of a thousand square feet may be substituted. In either case the material should be well incorporated with the soil. Stiff clay soils require both sand and vegetable matter before they are really suitable for the production of a good turf. There is little danger of using too much of either of these materials. A quantity of sand equivalent to a surface layer of 1 inch in depth if worked into the clay produces a permanent improvement in its texture. Even a smaller quantity is helpful, while much more can be used advantageously. On the average-sized lawn it is entirely feasible to use sand for the purpose of improving stiff clay soils. It is also both practicable and desirable to use clay for improving light sandy soils. Decayed vegetable

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...er, or humus, as it is called, lightens the texture of clay soils, increases their water-holding capacity, and improves their drainage; it also improves sandy soils by making them more cohesive and more retentive of moisture. Thoroughly rotted and comminuted barnyard manure, good compost, or mushroom soil are all suitable forms of humus for the lawn. One-half a ton to a thousand square feet ordinarily is sufficient. This should be thoroughly mixed with the soil. Organic matter can be supplied to the soil intended for a lawn much more successfully and usually more cheaply in the form of manure or compost than by means of green crops turned under.

Lime in some form improves most soils for bluegrass and white clover, and unless soils are already well supplied with lime it should be added at the rate of not less than 100 pounds per thousand square feet. The application should be made considerably in advance of seeding time. Applications of lime are of very doubtful value for the bent-grasses or the fescues unless the soils are very acid or contain large quantities of poorly rotted organic matter.

Preliminary preparation, by which is meant the thorough stirring of the surface foot of soil, should begin several weeks prior to seeding to allow sufficient time for the ground to become thoroughly settled and for the weed seeds to germinate.

SEED AND SEEDING.

There are several species of turf-forming grasses that can be used for lawn making in this country, but for the northern part of the United States Kentucky bluegrass is, generally speaking, the most desirable. For the best results it is commonly used in mixtures with other grasses. The mixture contained in the accompanying package has been thoroughly tested and is thought to be quite as satisfactory for general lawn making as any mixture that can be used. It is composed by weight approximately as follows:

17 parts of Kentucky bluegrass.
4 parts of recleaned redtop.
3 parts of perennial rye-grass.
1 part of white clover.

A slight modification of these proportions makes no material difference in the appearance or success of the lawn. A mistake which is commonly made in starting a lawn is that of using too little seed. A thick stand of grass is essential at the beginning, and in order to be certain of securing it seed of the above mixture should be sown at the rate of not less than 4 or 5 pounds to a thousand square feet.

Except perhaps in the northern tier of States and in New England, early-autumn seeding is much more satisfactory than spring seeding. South of New York and all the New England States spring seeding

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should rarely if ever, be practiced. Young grass does not stool well in the spring and summer and is not sufficiently aggressive to combat crab-grass and other summer annual weeds. In most of the area south of the New England States and north of the Potomac and Ohio Rivers the best time for seeding lawns is during the first weeks of September.

After the preliminary preparation, which involves the thorough working of the soil by some means, the surface of the area to be seeded should be thoroughly fined with a rake or similar implement and bone meal should be applied at the rate of about 20 pounds to a thousand square feet. The bone meal is of much benefit to the young grass, since it assists it in making sufficient growth to pass the first winter in good condition. The main point to be observed in seeding is to sow the seed evenly and to cover uniformly but lightly. The covering can be done on a small area with an ordinary garden rake or on a large area with a weeder. Light rolling after covering is frequently beneficial.

REPAIR AND MANAGEMENT.

To improve an old lawn is frequently more difficult than to make a new one. It is usually impracticable to attempt the improvement of turf that is very poor. Reasonably good turf, however, can be bettered materially by reseeding and fertilizing. Reseeding an old lawn should be done at the same time of the year as new seeding. South of New York it should be done in the early autumn. If the lawn is patchy the small areas should be scratched with a steel rake or similar implement and dressed with a mixture of good loam, compost, or humus and the grass seed then sown. The loam or humus forms a suitable medium for the germination of the seeds and the development of the young grass plants. If the turf is thin over large areas seeding can best be accomplished by a disk seeder, which cuts in to the turf and deposits the seed. If a disk seeder is not available, some implement should be used that will loosen the soil but not tear the turf badly. After seeding, a dressing of loam or compost should be given and the area rolled lightly.

In the northern tier of States reseeding should be done early in the spring. At that time the soil is more open than later in the season and offers a better seed bed. Light rolling after seeding in the spring is usually beneficial.

Care should be taken when mowing or watering newly patched areas to avoid disturbing the young grass.

GENERAL LAWN MANAGEMENT.

The care of a lawn after seeding has much to do with its success. In most parts of the country constant attention is necessary in order that even a fair lawn may be maintained.

FERTILIZING.

Most lawns need an occasional application of some good fertilizer, regardless of the kind of soil upon which they are established. Thoroughly rotted stable manure is an excellent fertilizer for grass, provided it is not coarse. Manure well composted with sod and leaf mold and sifted before using makes a very satisfactory dressing. So also does soil from mushroom cellars that has been well fined and sifted. Coarse manure or humus dressing should never be used, as the grass is almost invariably killed in small patches underneath the lumps. Humus dressings should be applied in the autumn or winter and again in the spring. The material should be in such condition that nothing will be left to rake off. Bone meal is one of the best commercial fertilizers for the lawn. It is safe to apply and gives fairly quick results. The best time to apply it is in the late winter or very early spring; 10 or 15 pounds to a thousand square feet is a sufficient quantity to use. Nitrate of soda is also an excellent commercial fertilizer, but on account of its extremely quick action it produces a scalding effect unless applied with much care. It is because of this fact that the fertilizer is recommended conservatively. However, if a quick stimulation of the grass is desirable it can best be accomplished by the use of nitrate of soda. Five pounds of the substance for a thousand square feet of surface is an ample quantity for one application, and if applied in a very dilute solution with a sprinkling pot and the grass thoroughly watered afterwards very little scalding may be expected. As a rule, the lawn should be fertilized in the winter or early spring. Occasionally, however, it seems necessary to give it an application of fertilizer during mid season or early fall. In hot weather fertilizer should be used very carefully. Pulverized limestone is a helpful top-dressing for bluegrass and white-clover lawns, as the lime corrects the acidity of the surface soil and promotes a vigorous growth, especially of bluegrass.

SANDING.

Heavy clay soils are improved by applications of sand an eighth of an inch or more in depth. These may be made advantageously in the fall, winter, or early spring. Sharp, clean sand free from silt is most suitable for this purpose. While the sand works into the surface of the soil very quickly and disappears from view, it nevertheless produces a lasting and decidedly beneficial effect.

MOWING AND ROLLING.

Good turf requires frequent clipping. Lawns ordinarily should be clipped twice a week during the rapid growing season. Very close clipping may be detrimental, but it is seldom that a lawn is injured by this means. While it usually makes little difference whether the

clippings are removed or allowed to remain on the lawn, it is considered the best practice to remove them. The roller should be used discreetly, especially on clay soils. Reasonably heavy rolling in the spring to firm the turf and smooth the surface of the lawn is quite helpful. Rolling during the summer is neither necessary nor advisable.

WATERING.

During dry periods lawns require watering. A thorough soaking twice or three times a week is preferable to a light sprinkling frequently. On bright, hot days the lawn should be watered in the late afternoon or evening rather than during the morning or midday. Any type of sprinkler that distributes the water evenly and freely may be used. It is a good practice to begin sprinkling lightly, allowing the water to soak into the surface of the soil slowly before a full application is made. In this way the absorption is greatly increased and the quantity of water that can be applied without run-off is much larger than by the ordinary method.

ERADICATION OF WEEDS.

While weeds are troublesome in the lawn throughout the growing season, they are particularly so from the latter part of June until frost. During this period crab-grass, which is by far the worst lawn weed south of New York and New England, is especially aggressive. There is really no satisfactory method of checking the growth of crab-grass except to cut or pull the plants while they are still small. This is a tedious and an expensive practice, but where a good lawn is involved the results justify the expense. Much difficulty is usually experienced in cutting crab-grass with an ordinary lawn mower on account of its semiprostrate character. This difficulty can be overcome to a certain extent if the grass is raked prior to mowing. The rake raises the branches of the grass so that they can be clipped reasonably close with an ordinary lawn mower. It is impossible, however, to cut crab-grass sufficiently close entirely to prevent the formation of seed.

There are many other weeds that are troublesome in the lawn, not only in the spring but in the summer and autumn. Among the most important are dandelion, plantain, chickweed, veronica, and ox-eye daisy. Chemical sprays are somewhat more effective in eradicating these weeds than they are in eradicating crab-grass. However, the best method of eradicating them is by means of a spud or similar implement. In the main, the use of chemical sprays on lawn weeds has not given very satisfactory results. The weed problem can best be solved by making the conditions as favorable as possible for the turf grasses and maintaining a strict watch at all times to remove troublesome weeds as they appear. In constructing a lawn

it is highly important that it be so protected that the overwash will not carry over it seed of noxious weeds. If this precaution is taken and no top-dressing containing weed seeds is used, the expense incident to keeping a lawn weed free diminishes as the lawn develops.

SHADY LAWNS.

To produce a good lawn in shade, especially in dense shade under trees and shrubs, is a very difficult matter. The grasses contained in the accompanying mixture are not particularly shade-loving grasses, but they can be made to thrive reasonably well in shade if given proper treatment.

By thorough watering and the liberal use of fertilizers and lime the evil effect of shade can in many cases be largely overcome.

Probably the best shady lawn grass that is readily available commercially is red fescue. This appears on the market at the present time under the name of Chewing's fescue. It requires essentially the same culture as outlined for the accompanying mixture, except that it is apparently not benefited by lime.

BULLETIN ON LAWNS.

Farmers' Bulletin 494, entitled "Lawns and Lawn Soils," may be procured without cost on application to the Secretary of Agriculture, Washington, D. C.

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